

## Pall® HSPA Hydraulic Fluid Purifier for Aircraft Maintenance

### Description

The Pall Mobile Hydraulic Fluid Purifier (HSPA) is a breakthrough in preventive maintenance saving time, money and protecting the environment.

- Aircraft hydraulic fluids (Skydrol<sup>1</sup> and HyJet<sup>2</sup>) are susceptible to contamination by water, solid particles, chlorinated solvents and air.
- Contaminated hydraulic fluid means damage and corrosion in vital system components. Insufficient purity can even lead to expensive grounding of the aircraft.
- Up to now, maintaining hydraulic fluid at an acceptable level can mean considerable aircraft downtime, maintenance efforts and costs.
- Storage and subsequent disposal of the contaminated fluid brings environmental penalties and increased cost.

### Benefits

With the Pall HSPA purifier, contamination can be practically eliminated within a few hours.

The Pall HSPA purifier uses the principle of vacuum dehydration to remove 100 % of free water and as much as 90 % of dissolved water. It also removes 100 % of free and entrained gases and up to 80 % of dissolved gases. Particulate removal is achieved using a high performance ( $\beta_{5(C)} \geq 1000$ ) 'Ultipor® III' filter element to polish the fluid before discharge back to the system reservoir.

- Automated operation.
- Existing hydraulic fluid in the system is purified - no draining, refilling, flushing necessary, saving time and money.
- No disposal problems, or impact on the environment.
- The Pall HSPA purifier is mobile and versatile - it operates where it is needed, when it is needed.

The Pall HSPA purifier is linked to the aircraft hydraulic systems like a ground power unit and will save the operator money, time and ensure operation of aircraft without down time due to fluid contamination.

Aircraft Approvals:

- Airbus 415.170/94
- Airbus SIL 29-051

This unit has provision to connect a Pamas<sup>3</sup> S40 particle counter and contains suitable mounting position, electrical and hydraulic points for customer connection. The Pamas S40 is not supplied as standard with the HSPA181 purifier unit. For further details of the Pamas S40, please contact the Pall sales office

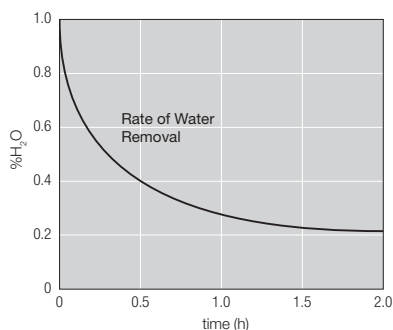


Pall HSPA  
Hydraulic Fluid Purifier



## Technical Data

Dry weight:	710 kg (1565 lb)
Overall dimensions:	Length (mm): 3000 maximum (with towbar extended) 1400 maximum (with towbar retracted) Width (mm): 1200 maximum Height (mm): 1750 maximum
Inlet connection:	Snap-tite <sup>4</sup> Series 72 QRC G1
Outlet connection:	Snap-tite Series 72 QRC G3/4
Circulation flow rate:	0 - 32 L/min (0 - 8.45 US gpm)
Total motor power:	17.22 kW max (single phase) 17.16 kW max (3 phase)
Fluid compatibility:	Compatible with petroleum based fluids, synthetic hydraulic fluids (including BMS3 - 11) rated for use with fluorocarbon or ethylene propylene seals (see Table 3 for seal options).
Maximum viscosity (at purifier):	100 cSt
Fluid Temperature range:	10 °C to 60 °C (50 °F to 140 °F)
Ambient Service Temperature:	40 °C (104 °F) max
Max pressure for inlet:	4.5 bar g (65.3 psig)
Min pressure for inlet:	0.5 bar g (7.3 psig)
Max pressure for outlet:	207 bar g (3000 psig)
Normal operating vacuum:	-0.8 bar g
Water removal:	Pall HSPA purifiers remove free water, free gases, dissolved water (up to 90 %) and dissolved air (up to 80 %).



## Ordering Information

Part Number: **HSPA181**   

Example Part Number: **HSPA181 400 50 J**  
(See bold reference codes in tables)

### Optional Item Part Numbers:

#### Cable and plug kit, 20m cable

Part Number: **HSPA181E**   

Example Part Number: **HSPA181E S 3 ++**  
Cable for 400V 50 Hz fitted to purifier

#### Inlet / Outlet hose kit, 5m hoses

Note: For use with Boeing 737 airframes, contact Pall Sales office.

Part Number: **HSPA181H**   

Example Part Number: **HSPA181H J 1 ++**  
Inlet/outlet hose for Aerospace, phosphate ester, standard couplings, fitted to purifier

Table 1: Voltage

Code 1	Code 2	Voltage
220	M	220V AC
380	R	380V AC
400	S	400V AC

Other voltages available on application.

Table 2: Electrical Frequency

Code 1	Code 2	Electrical frequency
50	3	50 Hz - 3 phase
60	4	60 Hz - 3 phase

Table 3: Seal Options

Code	Seal Material
Z	Fluorocarbon - for mineral oils or industrial phosphate esters
J	EPDM or PTFE encapsulate fluorocarbon - for aerospace low density phosphate esters

Table 4: Hose Kit Options

Code	Coupling Options
1	Standard couplings
2	Couplings to connect to Airbus A380 aircraft Not applicable to Z seal option
3	Couplings to connect to Boeing 787 aircraft Not applicable to Z seal option

Table 5: Fitting Options

Code	Option
++	Ordered with a purifier and factory fitted
Omit	Kit only for fitment to existing units

The Pall HSPA purifier meets all current harmonised European directives including the machinery, low voltage and EMC directives (CE marked).

The equipment has been assessed in accordance with the guidelines laid down in The European Pressure Directive 97/23/EC and has been classified within Sound Engineering Practice S.E.P. Suitable for use with Group 2 fluids only. Consult Pall Sales for other fluid/gas group suitability.



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<sup>1</sup> Skydrol is a trademark of Solutia Inc. and <sup>4</sup> Snap-tite is a trademark of Snap-tite, Inc.